



WATER SOFTENER WITH MICROPROCESSOR

INSTALLATION & OPERATING INSTRUCTIONS

Model : **AS14100MP268-960**

Serial No :

Manufacturer and Supplier of



FILTRATION & WATER TREATMENT PRODUCTS
for commercial, industrial and residential application



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H A R D N E S S T E S T

1. Water to be tested should be taken from a tap after the water softener
2. Measure 10ml of water into plastic bottle supplied (approximately 1/3 full)
3. Add one Yes/No tablet to sample water, replace cap and shake until tablet has completely dissolved.
(NOTE: do not handle Yes/No tablet with fingers)
4. The final colour to be obtained for soft water is green. (Note: The shade of green may vary.) If the colour turns red, the water is above 20 mg/l hardness, therefore another regeneration is recommended.
5. Rinse plastic bottle after each test has been completed.
6. When used as above, the tablets change the colour from green to red at a hardness of approximately 20ppm based on a sample volume of 10mls.

Other hardness test kits are available for more accurate testing eg.

Hardness Tablets

Directions: Take a 50ml sample of water in a screw capped bottle. Add one (1) tablet to sample, shake or crush to disintegrate. Repeat until last trace of reddish tinge disappears. The final colour is usually blue but with some water a greyish coloured end point is obtained.

Using 50ml sample -
 $\text{Hardness ppm} = (\text{number of tablets} \times 40) - 20$

LR (BW) Tablets

Directions: Take a 100ml sample of water in a screw capped bottle. Add one (1) tablet to sample, shake or crush to disintegrate. Repeat until last trace of reddish tinge disappears. The final colour is usually blue but with some water a greyish coloured end point is obtained.

Using 100ml sample -
 $\text{Hardness ppm} = (\text{number tablets} \times 2) - 1$

Contact IBC Water if further details are required.

WATER SOFTENER CALCULATIONS

MODEL AS14100MP268-960

To ascertain **DAYS** between regeneration periods the following data or estimations are required.

(Let **N** be the number of days to be calculated)

- | | | | |
|-----|--|------|---|
| .1. | Water Hardness in mg/l | call | H |
| .2. | Water Softener Hardness Removal Capacity from Table 1 in grams | call | C |
| .3. | Daily Water Usage in litres | call | D |

For household situations allow 250 litres per person per day.

CALCULATION

$$N = \frac{1000 \times C}{D \times H}$$

Select nearest lower whole number

If necessary consult your dealer or IBC Water Treatment for advice on setting up the softener.

EXAMPLE

Household use for 4 people on 220 mg/l hard water using Model AS14100MP at 3500 grams capacity.

$$\begin{aligned} N &= \frac{1000 \times 3500}{1000 \times 220} \\ &= 15.9 \text{ days} \\ &= 15 \text{ days} \end{aligned}$$

Note: Maximum number of days that can be selected is twelve (12).

WATER SOFTENER PERFORMANCE DATA SHEET

Automatic Model No.	Capacity & Salt Dosage		Recommended Maximum Service Flow Rate		Pipe Size		Resin Volume	Approx. Shipping Weight (kg)	Space Required
	Min	Max	Flow LPM		Inlet Outlet	Drain			W x D x H
	gram/kg	gram/kg	Contin-uous	Peak	mm	mm	Litres	Per Kg	metres
AS14100MP268-960	3500/6	7000/24	71	100	25	20	100	233	1.00 0.70 2.20

CABINET/BRINE CHAMBER: POLY MOULDED

Operating Pressure: 140 - 690 kPa

Temperature: 5° x 50°C

Electrical: 240V 50Hz 3 watts maximum

WARNING

A pressure reduction valve should be installed in areas of high water pressure (above 690kPa)

A water hammer arrestor should be installed if water hammer prevails.

Caution: Do not use where water is microbiologically unsafe or with water of unknown quality.

**FAILURE TO OBSERVE WARNINGS WILL VOID
WARRANTY**

INSTALLATION OF IBC TWO TANK WATER SOFTENER UNIT

FITTED WITH MODEL 268 VALVE/960 CONTROL

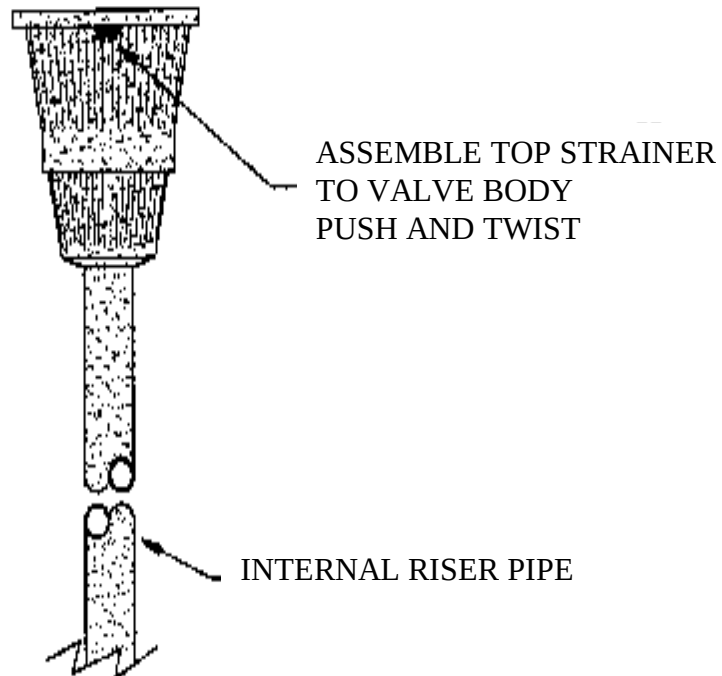
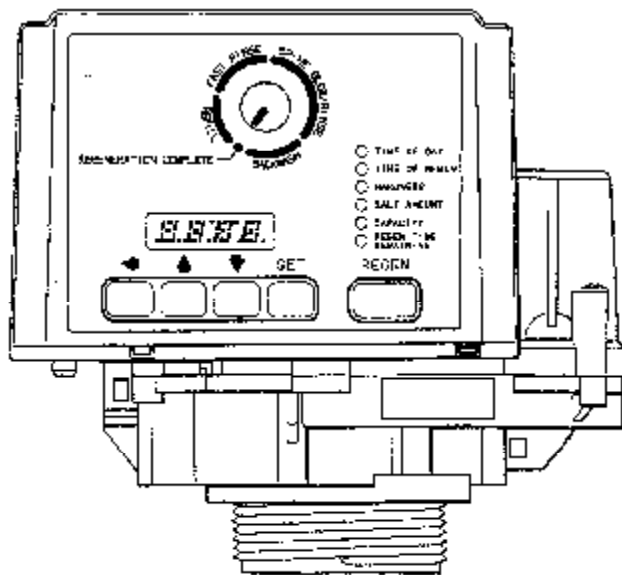
Check the equipment upon arrival for damage or shortages and report same to our Office or Agent before starting.

Position the Softener and Brine Tank on a firm foundation, preferably concrete, with sufficient space for operation and maintenance.

- STEP 1 Make sure the softener tank is empty and clean.
- STEP 2 Install the distributor tube in the softener tank, check the height in relation to top of softener tank. (Approximately 25mm above the top of the tank).
- STEP 3 Place a plastic cap over the end of the distributor pipe. A clean rag or plastic bag will suffice if plastic cap is not available - **NO** media must enter distributor pipe.
- STEP 4 Place a with mouth funnel in the mouth of the tank and load the resin and fill with water to within 50mm of the top. The resin **must not** be allowed to be spilled on the floor as it is very slippery and dangerous to walk on.
- STEP 5 Clean top of neck and threads of all traces of resin. Remove the plastic cap fitted in Step 3 taking care not to raise the distributor pipe. **NEVER** shorten the length of the distributor pipe.
- STEP 6 Unpack control valve, check that tank 'O' ring is in place. Screw on top strainer if not fitted. Fit control valve to softener tank, screw down hand tight.
- STEP 7 Connect inlet, outlet pipes and drain line to control valve as per Instruction Booklet.
- STEP 8 Remove lid from brine tank, connect brine tube from air check assembly on control valve, to brine riser tube in brine tank. Then connect brine overflow drain line to waste trap.
- STEP 9 Refer to Instruction booklet for start up procedure (page 11 "placing conditioner into Service")
- STEP 10 Load two bags of 25kg high purity water softener salt into brine tank and replace lid.

Table 3

MODEL	RESIN LITRES	BRINE TANK - SALT LOADING KG
AS14100MP268-960	75	50



NOTE:

ON A NUMBER OF SOFTENER MODELS AND FILTERS IT IS NECESSARY TO PACKAGE THE VALVE WITH THE TOP STRAINER SUPPLIED LOOSE.

IT IS IMPORTANT THAT THIS STRAINER IS ASSEMBLED TO THE VALVE DURING INSTALLATION.

THE LENGTH OF THE INTERNAL RISER PIPE IS FACTORY ADJUSTED FOR THE TANK SIZE PROVIDED.

DO NOT SHORTEN THIS PIPE UNDER ANY CIRCUMSTANCES

Series 268 Valve / 960 Control

Water Conditioning Control System
Installation, Operating and Maintenance Manual

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Safety

Caution
The plug-in transformer for this equipment is rated for indoor use only.

Warning
Never attempt o work on this control while standing in or near water without disconnecting electrical power to the control.

Introduction

The Model 960 Control provides sophisticated, demand-based water conditioning by incorporating a microprocessor and a water meter to electronically monitor the amount of water used daily. Each day, at Time of Regeneration, the control determine if the capacity remaining is sufficient to provide conditioned Water for the next day. If the remaining capacity is too small, the control automatically regenerates the resin bed.

If water usage changes, the computer automatically compensates for the change and regenerates as needed. Regeneration based on actual water usage. The control provides efficient, trouble-free, uninterrupted soft water luxury.

The Series 268 valve combines design simplicity with glass reinforced NORYL* plastic construction to provide an uncommonly reliable appliance.

NORYL is a trademark of GE Plastics.

Special Features

- **Memory Retention.** During a power outage, critical operating information in the control's memory is stored in a special electronic device called a NOVARAM. This information includes the time of day, water usage amounts, daily average water usage, all programming data and the number of days since the last regeneration. When power is restored, the information is re-turned to the microprocessor and operation resumes as if an outage never occurred. The time of day will be late by the length of the power outage. Because most power outages are less than one minute in duration, it may be months or years before the time display requires resetting. If an outage of one or more hours occurs, the time of day should be reset but no other reprogramming is necessary.
- **Design Reliability.** Solid-state electronics assure many years of trouble-free performance. The metering system has only one moving parts; a rotating turbine that measures water usage.
- **Time and Capacity Display.** During normal conditioning operation, the correct time of day alternates with capacity on the display. The capacity value is the number of gallons (cubic meters of metric units) of water that the unit can condition before another regeneration is needed.
- **Flow indicator.** The colon between the hours and the minutes in the Time of Day display flashes to indicate the flow of service water through the valve. This provides an easy determination of proper meter operation.
- **Hardness and Capacity Settings.** Once the hardness and capacity settings are entered, the information cannot be lost due to a power outage, so reprogramming is not necessary.
- **Guest Cycle.** An extra regeneration can be achieved at any time by pressing the REGEN button on the front panel. It takes a few minutes for the regeneration to start. The unit completes the regeneration in about two hours. This feature is beneficial when you expect to use more than the normal amount of water; for example, guest visits or an extra heavy laundry day.

General Conditioner Information

How Your Conditioner Works

In general, your water conditioner works in the following manner. Hard water flows into the conditioner and through the resin bed where calcium and magnesium hardness minerals are exchange. The conditioned water flows out of the resin bed into your plumbing system. After a certain amount of hard water has passed through the conditioner, the resin cannot remove any more minerals. This resin state is called exhaustion and indicates that the resin needs to be regenerated. The regeneration process restores the conditioner's ability to soften water. The control monitors the amount of water that flows through the conditioner and automatically calculates when to regenerate the resin bed.

Model 960 Control Front Panel

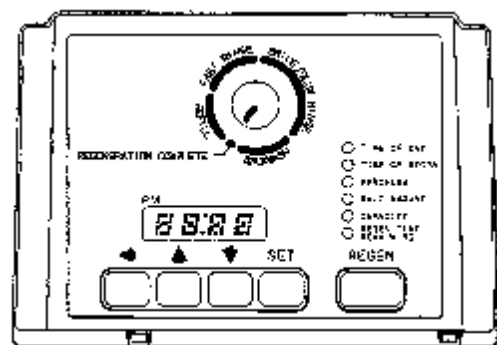


Figure 1

The main components of the model 960 Control front panel are:

- Regeneration Cycle indicator
- Green Indicator Lights
- Four-Digit Display
- Programming Push Buttons

- REGEN Push Button

Installation

All plumbing and electrical connections must conform to local codes. Inspect the unit carefully for carrier shortage or shipping damage.

Location Selection

- Locate unit as close to a drain as possible
- If supplementary water treating equipment is required, make sure that adequate additional space is available. Locate the brine tank in an accessible place so that salt can easily be added.
- Do not install any unit closer than 10ft (3m) of piping between the outlet of the water conditioner and the inlet of the water heater. Water heaters can transmit heat back down the cold water pipe into the control valve. Hot water can severely damage the controller.

A 10ft (3m) total pipe run (including bends, elbows etc) is a reasonable distance to prevent hot water damage. A positive way to prevent hot water from flowing from a heat source to the conditioner is to install a check valve in the soft water piping from the conditioner. If a check valve is installed, make sure that the water-heating unit is equipped with a properly rated temperature and pressure safety relief valve. Always conform to local codes.

- Do not locate the unit in an area where the temp ever falls below 34°F (1°C) or over 120°F (49°C).
- Do not install the unit near acid or acid fumes.
- The use of resin cleaners in an unvented enclosure is not recommended.

Water Line Connection

A bypass valve system must be installed to provide for occasions when the water conditioner must be bypassed for hard water or for servicing.

The most common bypass systems are the Autotrol Series 1265 Bypass Valve, (Figure 1), and plumbed-in globe valves, (Figure 2). Though both are similar in function, the Autotrol series 1265Bypass offers simplicity and ease of operation.

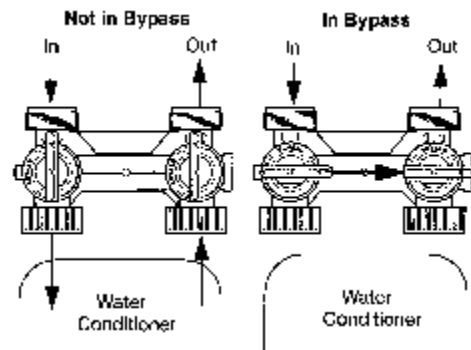


Figure 1 - Autotrol Series 1256 Bypass

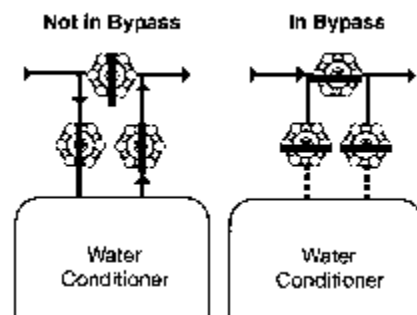


Figure 2 - Typical Globe Valve Bypass

Drain Line Connection

1. The ideal location for the unit is above and not more than 20ft (6.1m) from the drain. For such installations, using the appropriate adaptor fitting (not supplied), connect 1/2 in (1.3cm) plastic tubing to the drain line connection located at the rear of the control.
2. **The softener requires 20mm (3/4") drain line tubing. The drain line is located at the rear of the control valve. Ensure that the tubing is not kinked or squashed as this will restrict the flow and prevent the education of brine.**
3. If the unit is located more than 20ft (6.1m) from the drain, use 3/4in (1.9cm) tubing for runs up to 40ft (12.2m). You may elevate the line up to 6ft (1.8m) providing the run does not exceed 15ft (4.6m) and the water pressure at the conditioner is not less than 40psi (280kPa). You may elevate an additional 2ft (61cm) for each additional 10psi (70kPa) of water pressure.

4. When the drain line is elevated and empties into a drain which is below the level of the control valve, form a 7 inch (17cm) loop at the drain end of the line so that the bottom of the loop is level with the drain line connection. This provides an adequate siphon trap.
5. If the drain empties into an overhead sewer line, a sink-type trap must be used.

Caution

Never connect the drain line into a drain, sewer line or trap. Always allow an air gap between the drain line and the wastewater to prevent the possibility of sewage being back-siphoned into the conditioner.

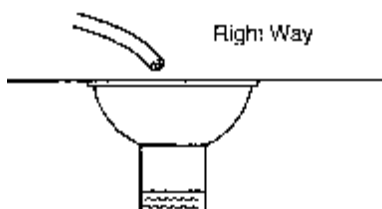


Figure 3 - Air Gap Installation

Note: Standard commercial practices have been expressed here. Local codes may require changes to these suggestions.

Brine Line Connection

It will be necessary to install the brine line to the brine fitting on the valve (3/8-inch NPT.)

Be sure all fittings and connections are tight.

Overflow Line Connection

In the absence of a safety overflow and in the event of a malfunction, the BRINE TANK OVERFLOW will direct "overflow" to the drain instead of spilling on the floor where it could cause considerable damage. This fitting should be on the side of the cabinet or brine tank.

To connect the overflow on the side of the brine tank. Insert overflow fitting (not supplied) into tank and tighten with plastic thumb nut and gasket as shown (Figure 4). Attach length of 1/2-inch (1.3-cm) I.D. tubing (not supplied) to fitting and run to drain. Do not elevate overflow line higher than 3 inches (7.6 cm) below bottom of overflow fitting. Do not tie into drain line of control unit. Overflow line must be a direct, separate line from overflow fitting to drain, sewer or

tube. Allow an air gap as per drain line instructions (Figure 3).

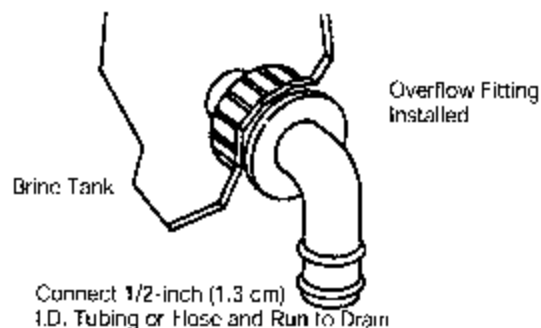


Figure 4

Battery Back-Up

The 960 ProSoft Controller features a battery back-up feature that will allow the controller to continue to keep time and record water usage during a power outage.

The control's display will not light, but the controller will continue to measure water usage for up to five hours. When power is restored to the unit, it will continue to work as before. Connect a nine-volt alkaline battery to the connecting cable at the back of the conditioner's control box, Figure 5.

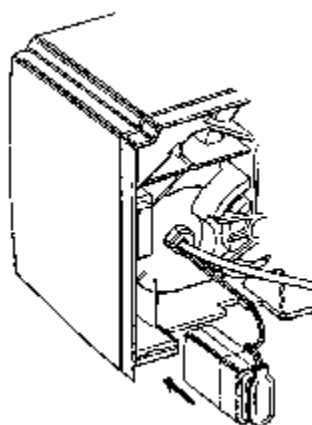


Figure 5

Refer to Figure 1 or your conditioner for the location of these features.

The front panel incorporates several important features which allow you to know the status of your water conditioner. These features are:

- **Regeneration Cycle Indicator.** The white indicator points to the status of the conditioner. Soft water is available when the indicator points to REGENERATION COMPLETE. Other positions indicate that the conditioner is regenerating the resin bed and only hard water is available.
- **Four-Digit Display.** The four-digit red LED display shows system information such as time of day, gallons of conditioned water available, time the conditioner will regenerate, or any error alarms
- **Green indicator lights.** The green indicator lights are located at the right of the control panel.
 - **TIME OF DAY**
 - **TIME OF REGEN**
 - **HARDNESS**
 - **SALT AMOUNT**
 - **REGEN TIME REMAINING**

When a green light is on next to one of the six control legends, the LED display provides information pertaining to that legend. When conditioned water is available, the display alternates between TIME OF DAY and CAPACITY and the corresponding green lights alternate between these control legends.

- **Programmed Push Buttons.** The programming buttons are located at the bottom of the panel under the display. Use the buttons to look at or change the conditioner settings.
- **REGEN Push Button.** The REGEN button is located at the bottom of the panel below the six indicator lights. Press the button to start a regeneration of the water conditioner.

Note: If you press the button again a minute or more after a regeneration begins, a second regeneration will start when the first regeneration is completed. The display freezes with the REGEN TIME REMAINING information. After the first regeneration is completed, the second regeneration begins immediately. The display will alternate between the TIME OF DAY and REGEN TIME REMAINING.

Control Settings

General Information

Use the four programming push buttons to change any of the control settings. Settings can only be changed if the regeneration cycle indicator is pointing at REGENERATION COMPLETE. If you try to change the setting when the cycle indicator is in any other position or if the setting is not valid, the control beeps to let you know that the new setting has been ignored.

To change a setting: Press the down arrow **↓** button until the green light is illuminated next to the control setting you want to change. That control setting value shows on the display. Press the **SET** button and the far right number on the display starts flashing. If you want to change the number, press the up arrow **↑** button to increase the number or the down arrow **↓** button to decrease the number. To skip the number without changing, press the left arrow **←** button.

Note: If you press and hold either the up arrow **↑** button or the down arrow **↓** button for more than 1 second, the flashing number will scroll up or down.

When the number is correct, press the left arrow **←** button. The first number stops flashing and the next number starts flashing. You can only change the flashing number. Continue changing numbers until you reach the desired setting. Press the **SET** button. The numbers stop flashing and the control accepts the new setting. After approximately 30 seconds, the control starts alternating the display between TIME OF DAY and CAPACITY.

Note: If a beep sounds, the new setting is not accepted because it was outside the range of allowable values. The old setting will be shown on the display.

Time of Day Clock

The Control uses the Time of Day Clock and the amount of conditioned water remaining to decide when to begin a regeneration. When a regeneration is necessary and the Time of Day Clock is at the same time as the Time of Regeneration setting, the control starts the regeneration.

When the green light is on next to the TIME OF DAY legend, the display is showing the time that the control thinks it is correct. If you need to change the Time of Day, refer to the instructions later in this section. The Time of Day displays time in hours and

minutes separated by a colon[:]. When the colon is flashing on and off, water is flowing through the conditioner. There is a small red dot in the upper left corner near the PM letters to indicate PM for 12-hour clocks. When the dot is off, the time is AM. You can set the clock for any time, AM or PM.

Complete the following steps to change the Time of Day:

1. Press the down arrow **↓** button until the green light next to the TIME OF DAY legend is on.
2. Press the **SET** button and the minute number on the display starts flashing. If you want to change this number, press the up arrow **↑** button to increase the number or the down arrow **↓** button to decrease the number. To skip the number without changing, press the left arrow **←** button.
3. When the number is correct, press the left arrow **←** button. The first number stops and the next number starts flashing. You can only change the flashing number.
4. Continue changing numbers until you reach the desired setting.
5. Press the **SET** button. The number stops flashing and the control accepts the new setting. After approximately 30 seconds, the control starts alternating the display between TIME OF DAY and CAPACITY.

Note: If a beep sounds, the new setting is not accepted.

Reminder: The control does not keep time during a power outage but will resume its timekeeping from the time of day power was lost. A short power outage should not cause a problem. If the outage is several hours, the control will regenerate at the wrong time of day. All other memory is stored in the NOVRAM and maintained during power outage. Refer to page 3.

Time of Regeneration

The control uses the Time of Regeneration to decide when to begin a regeneration. When a regeneration is necessary and the Time of Day Clock is at the same time as the Time of Regeneration setting, the control starts the regeneration. The factory setting for Time of Regeneration is 2:00 AM. If this time is inconvenient, you can select any other time of day. Remember that the soft water is not available during a regeneration of the water conditioner. Time of Regeneration can be set for any time, AM or PM.

Note: The control may be programmed for an immediate regeneration option. In this case, the control does not wait for the Time of Regeneration but regenerates when the remaining capacity reaches zero. Contact your dealer for more information regarding this option.

Complete the following steps to change the Time of Regeneration:

1. Press the down arrow **↓** button until the green light next to the TIME OF REGEN legend is on.
2. Press the **SET** button and the minute number on the display starts flashing. If you want to change this number, press the up arrow **↑** button to increase the number or the down arrow **↓** button to decrease the number. To skip the number without changing, press the left arrow **←** button.
3. When the number is correct, press the left arrow **←** button. The first number stops flashing and the next number starts flashing. You can only change the flashing number.
4. Continue changing numbers until you reach the desired setting.
5. Press the **SET** button. The number stops flashing and the control accepts the new setting. After approximately 30 seconds, the control starts alternating the display between TIME OF DAY and CAPACITY.

Note: If a beep sounds, the new setting is not accepted.

Hardness Setting

The Hardness Setting refers to the amount of hardness minerals in your water before it is conditioned. The control uses this setting to calculate how many gallons of water can be conditioned before a regeneration is necessary.

Your water treatment dealer tested the water at the time of installation and entered a Hardness Setting in the control. We recommend that you consult your dealer or have your water retested before changing this setting.

You can see the Hardness Setting the dealer entered by pressing the down arrow **↓** button until the green light next to the HARDNESS legend is on. The number on the display is the measure of water hardness in grains per gallon (milligrams per litre for metric).

Complete the following steps to change the Hardness Setting:

1. Press the down arrow **↓** button until the green light next to the HARDNESS legend is on. The setting range is (30 TO 2500 milligrams/litre for metric)
2. Press the **SET** button and the minute number on the display starts flashing. If you want to change this number, press the up arrow **↑** button to increase the number or the down arrow **↓** button to decrease the number. To skip the number without changing, press the left arrow **←** button.
3. When the number is correct, press the left arrow **←** button. The first number stops flashing and the next number starts flashing. You can only change the flashing number.
4. Continue changing numbers until you reach the desired setting.

5. Press the **SET** button. The number stops flashing and the control accepts the new setting. After approximately 30 seconds, the control starts alternating the display between TIME OF DAY and CAPACITY.

Note: If a beep sounds, the new setting is not accepted.

Reminder: Whenever the HARDNESS or CAPACITY

- Setting is changed, you should regenerate the conditioner by pressing the REGEN button.

Salt Setting

The Salt Setting refers to the total amount of salt, in kilograms that the control uses during a regeneration of the resin bed. The amount of salt used in a regeneration determines the amount of water that the conditioner softens between regenerations. If this setting is changed, it may be necessary to change the Capacity Setting as well. Refer to Table 2 for SALT and CAPACITY information.

Complete the following steps to change the Hardness Setting:

1. Press the down arrow **↓** button until the green light next to the SALT legend is on. The display shows a number with a zero or a five to the right of the decimal point. No other number can be entered in this position. The setting range is (0.1 to 25.5 kilograms for metric).
2. Press the **SET** button and the minute number on the display starts flashing. If you want to change this number, press the up **↑** button to increase the number or the down arrow **↓** button to decrease the number.
To skip the number without changing, press the left arrow **←** button.
3. When the number is correct, press the left arrow **←** button. The first number stops flashing and the next number starts flashing. You can only change the flashing number.
4. Continue changing numbers until you reach the desired setting.
5. Press the **SET** button. The number stops flashing and the control accepts the new setting. After approximately 30 seconds, the control starts alternating the display between TIME OF DAY and CAPACITY.

Note: If a beep sounds, the new setting is not accepted.

If the control does not display this setting, your dealer has disabled it. Some municipalities require that the Salt Setting not be adjustable. Contact your dealer for additional information.

Capacity Setting

The Capacity Setting refers to the kilograins of hardness that can be removed by the conditioner between regenerations. Your dealer entered this setting when the control was installed. Please consult with your dealer before changing this setting.

Complete the following steps to change the Hardness Setting, refer to Table 1:

1. Press the down arrow **↓** button until the green light next to the SALT legend is on. The setting range is (0.01 to 14.00 kilograms for metric).
2. Press the **SET** button and the minute number on the display starts flashing. If you want to change this number, press the up **↑** button to increase the number or the down arrow **↓** button to decrease the number.
To skip the number without changing, press the left arrow **←** button.
3. When the number is correct, press the left arrow **←** button. The first number stops flashing and the next number starts flashing. You can only change the flashing number.
4. Continue changing numbers until you reach the desired setting.
5. Press the **SET** button. The number stops flashing and the control accepts the new setting. After approximately 30 seconds, the control starts alternating the display between TIME OF DAY and CAPACITY.

Note: If a beep sounds, the new setting is not accepted.

Reminder: Whenever the HARDNESS or CAPACITY setting is changed, you should regenerate the conditioner by pressing the REGEN button.

If the control does not display the Capacity Setting, your dealer has disabled it. Some municipalities require that the Salt Setting be disabled which also disables the Capacity Setting. Contact your dealer for additional information.

Note:- The softener has been factory preset with the maximum salt setting and the maximum capacity setting - Do not put in any higher values

MODEL AS14100MP268T-960 SOFTENER

THE MICROPROCESSOR CONTROL WILL REQUIRE BASIC DATA PROGRAMMING TO SUIT THE WATER HARDNESS AND DESIRED UNIT CAPACITY

IMPORTANT: IT IS ESSENTIAL THAT YOU READ THE GENERAL CONDITIONER INFORMATION AND CONTROL SETTINGS OF THIS MANUAL BEFORE ATTEMPTING TO SET THE FUNCTIONS OF THIS UNIT. THE DEALER OR AGENT CAN SUPPLY THE RECOMMENDED HARDNESS CAPACITY. HOWEVER DO NOT EXCEED THE MAXIMUM KILOGRAMS OF HARDNESS CAPACITY FIGURE IN TABLE 2.

SUGGESTED SALT SETTINGS

Table 2

Kilograms of Hardness Capacity	Kg of Salt
Minimum 3.5	6
4.52	10
5.8	15.75
Maximum 7.0	24

PROGRAMMING PARAMETERS

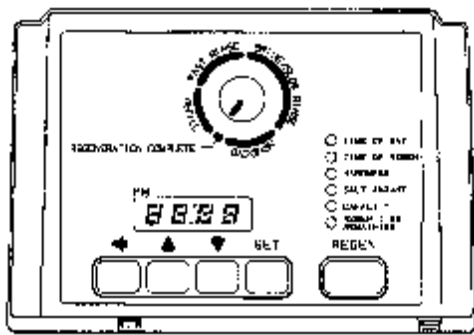
To be done at time of commissioning

Table 1

Parameter		Range of Values	Min. Increments	Programming For your Application	Units of Measure	Notes
Name	Description					
P1	Time of day AM or PM	1:00 to 12:59	1	Current time	Hour/minute	Range depends on value selected for P13. Enter the current time.
P2	Time of day Of regeneration	1:00 to 12:59 AM to PM	1	2:00am	Hour/minute	Range depends on value selected for P13. Skip this parameter to accept the default or enter a new time.
P3	Hardness of water	30 to 2500	1 10		Mg/l	Unit of measure depends on value selected for P12. Test water hardness and enter that value.
P4	Salt amount	01 to 25.5	0.5 0.1		Kilograms	Unit of measure and default depends on value selected for P12. Refer table 2.
P5	Capacity of unit	0.01 to 14.00	0.1 0.01		Kilograms	Range depends on value selected for P12. Enter the unit capacity.

NOTE: All other parameters have been factory preset - DO NOT CHANGE

Model 960 Control Front Panel



Water Conditioner Regeneration

Your water conditioner regenerates for one of two reasons:

- The control determines that the conditioner does not have enough capacity remaining to satisfy your soft water needs for the next day.
- The REGEN button was pressed.

In either case, the REGENERATION INDICATOR makes one complete counterclockwise rotation and returns to REGENERATION COMPLETE. The indicator pauses at some or all of the different positions shown on the label around the indicator. The display alternates between TIME OF DAY and REGEN TIME REMAINING, as indicated by the green lights next to the legends. Regen Time Remaining is shown in minutes on the display. When the indicator reaches REGENERATION COMPLETE and the time remaining is zero; the regeneration is complete, conditioned water is available for use, and the control starts alternating the display between TIME OF DAY and CAPACITY. **No settings can be changed during a regeneration.** The settings can be viewed, but the control beeps and ignores any attempt to change settings.

Automatic Regeneration

The control makes regeneration decisions based on the amount of water that has flowed through the conditioner. The control uses the Hardness and Capacity settings to calculate the number of gallons (cubic meters for metric) which can be conditioned. At the Time of Regeneration, the control updates the average usage for the previous day and adjusts the reserve capacity accordingly. The reserve is kept at a minimum for optimal economy. The control reacts to a sudden increase in water usage. If a day's is more than double the current average, the control anticipates that a second day of high usage is likely to occur. The high usage amount is used as the reserve when the control performs the regeneration computation.

The Guest Cycle option and the Calendar Override option may override this computation. Refer to the **Additional Features** section in this manual or contact your dealer for more information about these options. The factory setting for Time of Regeneration is 2:00 AM. You can change this time. Refer to the **Time of Regeneration** section in this manual for additional information.

Manual Regeneration

To force the control to perform a regeneration, press the REGEN push button. This button is located on the front of the control. When you press the REGEN button, the control performs a full regeneration of the conditioner. You can use this feature if you need a large amount of conditioned water but the capacity remaining is low.

Note: If you press this button again a minute or more after regeneration begins, a second regeneration will start when the first regeneration is complete. The display shows the REGEN TIME REMAINING information.

Care of Your Water Conditioner

General

Check the salt level in the salt storage tank a few weeks after installation and weekly after that. Always maintain the salt level above the water level for a consistent salt dosage and proper water conditioner operation. Don't allow the conditioner to run out of salt before refilling. When refilled, the salt storage tank contains enough salt to support numerous resin bed regenerations. Use pellet, block, or nugget water conditioner salt. Do not use rock salt. Some rock salt may contain high levels of impurities, which affect conditioner operation. Have the salt storage tank serviced once a year to remove accumulated sediment that may impede brine draw.

IBC Water recommends the use of IBC Premium Grade water softener salt available in 25kg bags.

Preventative Maintenance

Injector and Injector Screen

The injector is the component, which creates the vacuum necessary to draw the brine into the water conditioner. Clean the injector and the injector screen once a year in order to maintain proper water conditioning. Some locations may require more frequent injector and screen servicing.

Complete the following steps to clean the injector and the injector screen:

1. Unplug the wall mount transformer.
2. Shut off the water supply or put the bypass valve(s) into the bypass position.
3. Relieve system pressure by opening Valve No. 7 (at rear) with a screwdriver, (Figure 8).
4. Using a screwdriver, remove the injector screen and the injector cap, (Figure 9).
5. Clean the screen with a fine brush. Flush with water until clean
6. Using a needle-nose pliers, pull the injector straight out.
7. Flush water into the injector screen recess of the valve body to flush debris out through the injector recess.
8. Clean and flush the injector.
9. Lubricate the o-rings on the injector, injector cap, and injector screen with silicone lubricant only.
10. Reinstall the injector, injector cap and injector screen.

IMPORTANT: Do not overtighten the plastic cap. Seat the cap lightly into position. Overtightening may cause breakage of the plastic cap that may not be immediately evident.

11. Plug the wall-mounted transformer into outlet; reset clock if necessary.
12. Slowly open the water supply valve or return the bypass valve(s) to the "service" position.

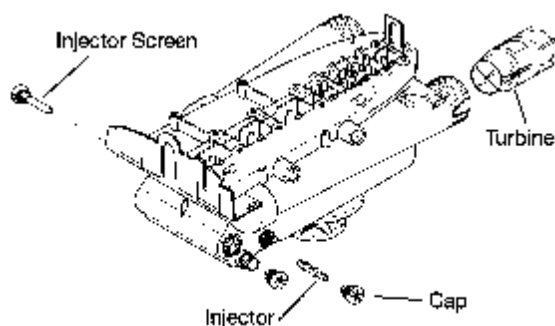


Figure 9

Water Meter Maintenance

The metering device used with the 960 demand controls may require simple maintenance. In rare instances, the turbine wheel of the water meter can collect small particles of oxidised iron, eventually preventing the wheel from turning.

1. Shut off the water supply or put the bypass valve(s) into the bypass position.
2. Relieve pressure by opening the Backwash Drain Valve (the seventh back from the control) with a screwdriver (Figure 8).
3. Loosen and remove the pipe/tube adapters or 1265 bypass from the inlet and outlet of the valve body.
4. Using a needle-nose pliers, remove the turbine from the outlet housing. Grasp one of the four vanes of the outer gland and pull straight out to remove turbine assembly from the outlet of the valve (Figure 9).
5. Carefully remove the turbine wheel from the housing. Use a toothbrush to lightly scrub the iron off the magnet. Iron buildup on the surfaces can be removed by soaking the wheel in a medium hydrosulphite (such as RoVer*) solution for a few minutes. Flush thoroughly with water.
6. Carefully reinstall the turbine wheel into the turbine cage housing. Make sure that the shaft of the wheel seats into the bearing of the cage. Reassemble the turbine cage and check that the wheel rotates freely.
7. Reinstall the turbine cage into the outlet of the valve.
8. Reinstall the pipe adapters or 1265 bypass to the inlet and outlet of the valve.
9. Turn on the water supply or put the bypass valve(s) into the service position and purge the air out of the system.

To check for proper meter operation, open a downstream faucet and observe the water flow indication, blinking colon, on the display.

RoVer is a trademark of Hach Chemical Company*

Removing the Control

Complete the following steps to remove the 960 ProSoft control for servicing:

1. Unplug the wall-mount transformer.
2. Shut off the water supply or put the bypass valve(s) into bypass position.
3. Remove the rear cover by depressing the two tabs provided on the cover, Figure 10. Lift the front of the cover and remove to expose the valve.

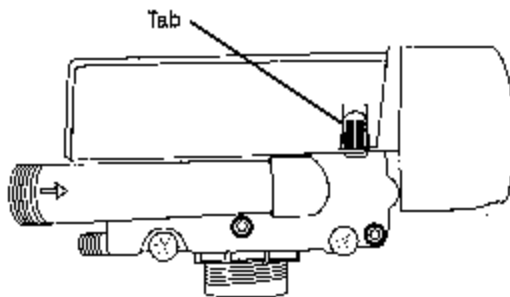


Figure10

4. Relieve system pressure by opening the backwash Drain Valve (the seventh valve back from the control) with a screwdriver, Figure11.

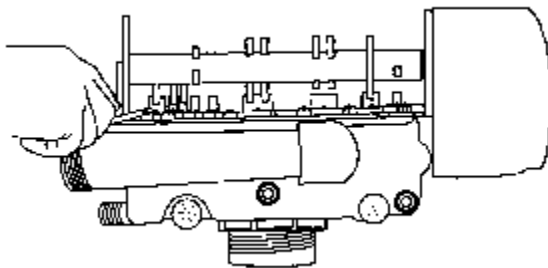


Figure10

5. Remove the camshaft or to reinstall it, the arrow on the rear of the camshaft must be pointing at the line on the rear "hoop" of the top plate. This occurs when the cycle indicator is rotated to the refill position. Press down on the back of the camshaft to disengage it from the rear "hoop" of the top plate, Figure 12. Slide the camshaft back to disengage it from the timer, Figure 13.

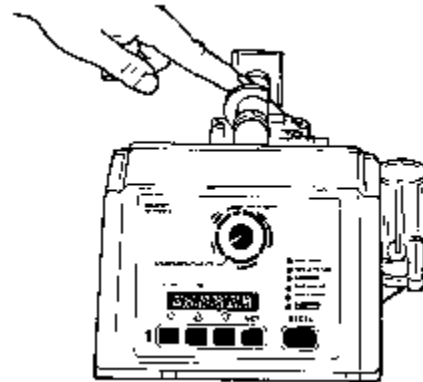


Figure 12

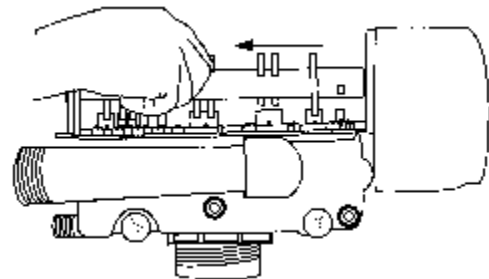


Figure 13

6. Disconnect the turbine probe from the turbine assembly.
7. Lift the control off the valve, Figure14. To replace the control, reverse the above procedure. Note that the camshaft needs to be positioned correctly before it can be inserted into the back of the control. There is a locating arrow on the camshaft. Position the arrow on the top of the shaft and slide the camshaft into the control. Push up on the end of the camshaft, furthest from the timer, snapping it into place.

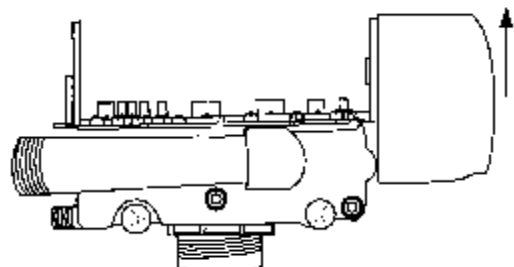


Figure 14

Removing the Valve Assembly Servicing

1. Unplug the power cord.
2. Shut off water supply or put bypass valve(s) into bypass position.
3. Remove cover and with screwdriver, relieve tank pressure by pushing open valve no> 7 (rear flapper) on control as shown (Figure 8).

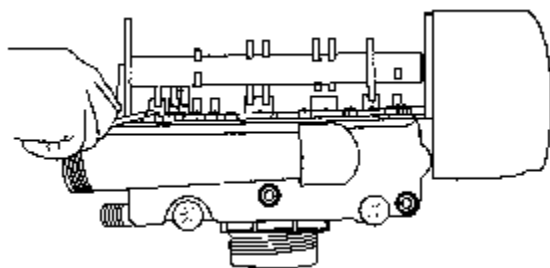


Figure 8

4. When used with a globe valve bypass, loosen and detach the inlet, outlet, brine and drain lines from the valve. If using the 1265 bypass, loosen and remove from bypass as well as loosening and remove the brine and drain lines.
5. Unscrew (counterclockwise) and remove valve from tank.
6. To replace the control valve, reverse the above procedure.

Disinfection of Water Conditioners

The construction materials of the water conditioner system do not support bacterial growth or contaminated the water supply. However, we recommend that the conditioners be disinfected after installation and before the conditioners are used to treat potable water. In addition, a conditioner can become fouled with organic matter during normal usage or with bacteria from the water supply. Periodic disinfection is recommended for all conditioners.

Use one of the following methods of disinfection based on operating conditions, style of conditioner, type of ion exchange, and disinfectant available.

Sodium Hypochlorite

Sodium Hypochlorite, 5.25% solutions, can be used with polystyrene resin, synthetic gel zeolite, greensand, and bentonites and are available under trade names such as Chlorox, Linco, Bo Peep, White Sail and Eagle Brand Bleach. Adjust the dosage if stronger commercial solutions are used.

The recommended dosage for 5.25% solution is:

- Polystyrene resin: 1.2 fluid ounces per cubic foot..
- Non-resinous exchangers: 0.8 fluid ounces per cubic foot..
- **MODEL AS1375MP:- 100mls**
- **MODEL AS14100MP:- 130mls**

Calcium Hypochlorite

Calcium Hypochlorite, 70% available chlorine, is available in several forms including tablets and granules. These solid materials can be used directly without dissolving before application. The recommended dosage for Calcium Hypochlorite is two grains (approx. 0.1 ounce) per cubic foot.

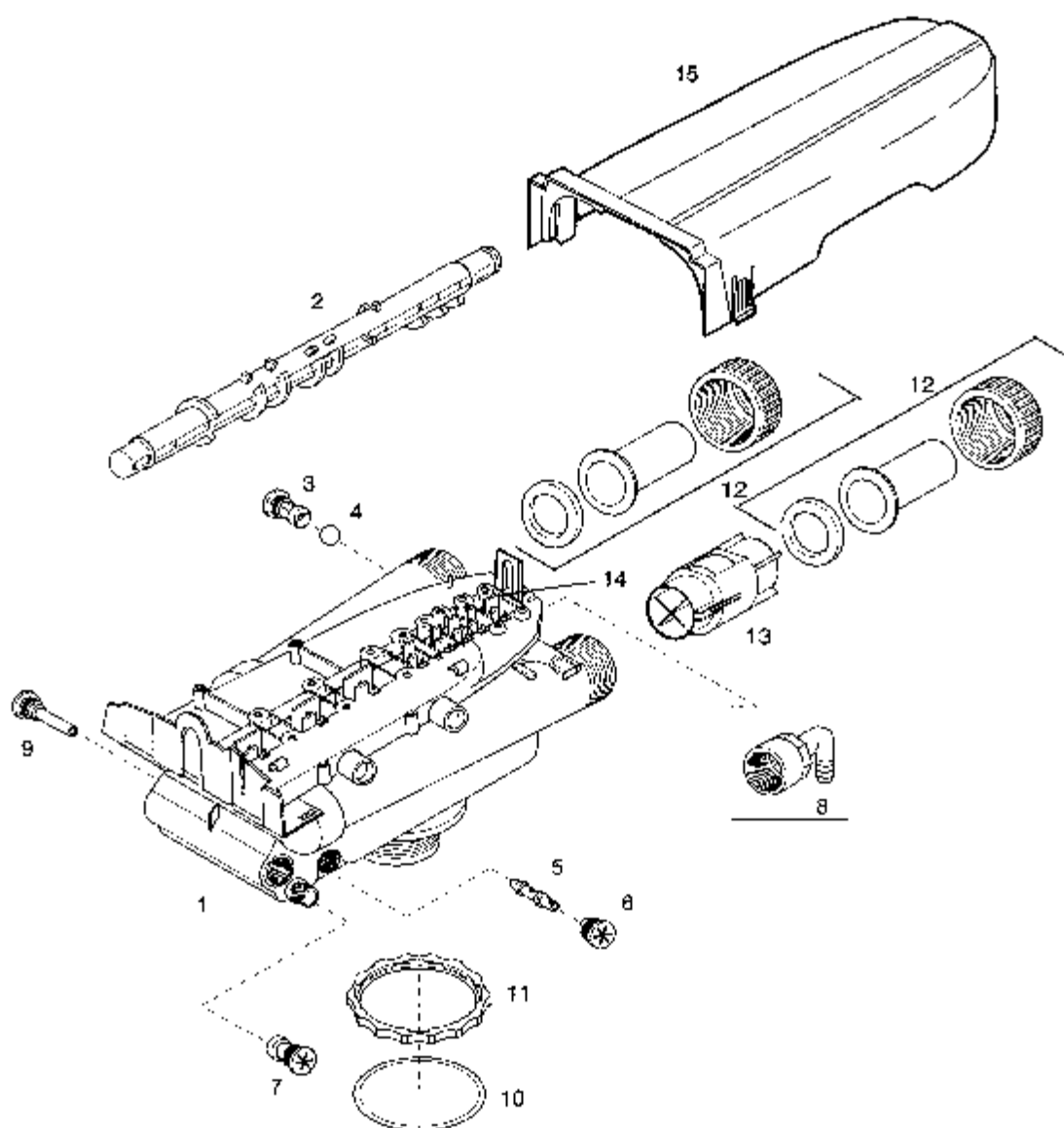
- **MODEL AS1375MP:- 8 Grams**
- **MODEL AS14100MP:- 11 Grams**

Complete the following steps to disinfect the conditioner:

1. Add the Calcium Hypochlorite to the brine well of the brine tank. Make sure that the brine tank has water in it so the solution is carried into the conditioner.
2. Press the REGEN button.

Replacement Parts

Performa Valve



Parts List

Code	Part No.	Description	Qty
1	1035807	Valve Assy. w/o Flow Controls	1
2	1035615	960 Standard Camshaft:	1
3		Drain Control Assembly:	
	1	1000209 No. 7 for 7 in Diameter Tank	
	1000210	No. 8 for 8 in Diameter Tank	
	1000211	No. 9 for 9 in Diameter Tank	
	1000212	No. 10 for 10 in Diameter Tank	
	1000213	No. 12 for 12 in Diameter Tank	
	1000214	No. 13 for 13 in Diameter Tank	
	1000215	No. 14 for 14 in Diameter Tank	
4	1030502	Ball, Flow Control	1
5		Injector Assembly:	1
	1032970	"A" Injector - White	
	1032971	"B" Injector - Blue	
	1032972	"C" Injector - Red	
	1030272	"D" Injector - Green	
6		Injector Cap Assembly:	1
	1000217	"A" Cap	
	1000218	"B" Cap	
	1000219	"C" Cap	
	1030303	"D" Cap	
7		Brine Refill Control	
	1000222	.33 gpm	1
8	1002449	Drain Fitting Elbow (3/4" hose barbed)	1

Code	Part No.	Description	Qty
9	1000226	Screen/Cap Assembly.	1
10	1010429	O-ring	1
11	1035622	Tank Ring	1
12		Plumbing Adapter Kits:	
	1001606	3/4-inch Copper Tube Adapter Kit	
	1001670	1-inch Copper Tube Adapter Kit	
	1041210	1-1/4-inch Copper Tube Adapter Kit	
	1001608	22-mm inch Copper Tube Adapter Kit	
	1001609	28-mm Copper Tube Adapter Kit	
	1001613	3/4-inch CPVC Tube Adapter Kit	
	1001614	1-inch CPVC Tube Adapter Kit	
	1001615	25-mm CPVC Tube Adapter Kit	
	1001769	3/4-inch NPT Plastic Pipe Adapter Kit	
	1001603	1-inch NPT Plastic Pipe Adapter Kit	
	1001604	3/4-inch BSPT Plastic Pipe Adapter Kit	
	1001605	1-inch BSPT Plastic Pipe Adapter Kit	
	1001611	3/4-inch BSPT Plastic Pipe Adapter Kit	
	1001610	1-inch NPT Brass Pipe Adapter Kit	
	1001612	1-inch BSPT Brass Pipe Adapter Kit	
13	1033444	Turbine Assembly	1
14	1001580	Spring, Flapper Valve	1
15	1030372	Cover	1

* Not Shown

Valve Disc Kit:

1041174	Standard
1041175	Severe Service

960 Control Troubleshooting

Alarms

The Model 960 continuously monitors itself and sounds an alarm if it detects something wrong. The alarm is a beep that is on for one second and then off for nine seconds.

When the alarm sounds, the display shows the letter Err with a number from 1 to 4. Table 2 lists Err numbers, and solutions. To silence the alarm, press any button on the control. If the error still exists, the control will go back to the alarm condition after 30 seconds.

Model 960 Alarms

Indication	Description	Cause	Solution
Err1	Electronic Failure.	Control settings need reprogramming.	Press any key to load default values. Refer to "Programming the Model 960 Control".
Err2	Improper start of regeneration (limit switch closed when it should be open).	Valve camshaft has been manually rotated during a regeneration. Valve camshaft has been manually rotated out of "regeneration" complete position. Faulty motor. Faulty motor drive. Faulty switch.	Press any key to silence the alarm. (note: Alarm automatically clears at "TIME OF REGEN"). The control will turn the motor on and drive the camshaft to the proper location.
Err3	Improper finish of regeneration (limit switch open when it should be closed).	Valve camshaft has been manually rotated out of the "regeneration complete" position. Faulty motor Faulty motor drive. Faulty switch.	The control will turn the motor on and drive the camshaft to the proper location. Replace the control. Replace the control. Replace the control
Err4	Improper control settings. (One or more settings out of the allowable range).	One or more settings out of the allowable range.	Hardness: Adjust range: 3 to 250. Capacity: Adjust range: 0.1 to 140.0 Refill control: Adjust range: 1 to 99. Brine draw value: Adjust range per Table 4.

Problem	Cause	Solution
1. Capacity display stays at 9999 even though there is water usage.	a. Total system capacity was calculated to be a value greater than 9999.	a. As water usage continues, the remaining capacity will drop below 9999 and then other values will be shown.
2. Timer beeps when left arrow button is pressed.	a. Button is only active in the programming mode.	a. Refer to the programming section.
3. Timer does not respond to	a. Button is only active in the	a. Refer to the programming section

Problem	Cause	Solution
6. No water flow display when water is flowing (colon does not blink).	a. Bypass valve in bypass position. b. Meter probe disconnected or not fully connected to meter housing. c. Restricted meter turbine rotation due to foreign material in meter. ! d. Defective meter probe. e. Defective circuit board	a. Shift bypass valve into service position. b. Fully insert probe into meter housing. c. Remove meter housing, free up turbine and flush with clean water. Turbine should spin freely. If not, refer to the Water Meter Maintenance section. d. Replace control. e. Replace control.
7. Control display is frozen at Regen Time Remaining.	a. Back to back regenerations were requested.	a. Refer to the Water Meter Maintenance section.
8. Control regenerated at the wrong time of day.	a. Power outages. b. Time of day set incorrectly. c. Time of regeneration set incorrectly.	a. Reset time of day to correct time of day. b. Reset time of day to correct time of day. c. Reset time of regeneration.
9. Timer stalled in regeneration cycle.	a. Motor not operating. b. Motor runs backwards. c. No electric power at outlet. d. Incorrect voltage or frequency (Hz). e. Broken Gear. f. Defective switch. g. Air leak in brine connections (pressure locked flapper). h. Binding of camshaft.. i. Water pressure greater than 125 psi during regeneration. j. Defective circuit board.	a. Replace control. b. Replace control. c. Repair outlet or use working outlet d. Replace timer and/or transformer with one of correct voltage and frequency (Hz) e. Replace control. f. Replace control. g. Check all junction points and make appropriate corrections. h. Remove foreign object obstruction from valve disc or camshaft. i. Install pressure regulator. j. Replace control.
10. Continuous regeneration. Camshaft does not stop at the end of regeneration.	a. Broken projection on drive gear. b. Defective switch.	a. Replace control. b. Replace control.
11. Control does not regenerate automatically or when REGEN button is depressed.	a. Transformer unplugged. b. No electric power at outlet. c. Defective motor. d. Broken gear. e. Binding in gear train. f. Defective switch.	a. Connect power. b. Repair outlet or use working outlet. c. Replace control. d. Replace control. e. Replace control. f. Replace control.
12. Control does not regenerate automatically but does regenerate when REGEN button is depressed.	a. If water display is not operative, refer to item 5 in this table b. Incorrect hardness and capacity settings. c. Defective circuit board.	a. Refer item 5 in this table. b. Set new control values. Refer to the Programming section. c. Replace control.
13. Run out of soft water between regenerations.	a. Improper regeneration. b. Fouled resin bed. c. Incorrect salt setting. d. Incorrect hardness or capacity settings. e. Water hardness has increased. f. Restricted meter turbine rotation due to foreign material in meter housing. ! g. Excessive water usage below 1/5 gallon per minute	a. repeat regeneration making certain that correct salt dosage is used. b. Use resin cleaner. c. Set salt control to proper level. Refer to the Programming in this manual. d. Set correct values. Refer to the Programming in this manual. e. Set to new value. Refer to the Programming in this manual. f. Remove meter housing, free up turbine, and flush with clean water. Turbine should spin freely, if not, replace meter. g. Repair leaky plumbing and/or fixtures.

Troubleshooting

The technology upon which the Autotrol Performa control valve is based is well established and proven in service over many years. However, should a problem or question arise regarding the operation of the system, the control can very easily be serviced. For parts mentioned, refer to exploded views in the **Replacement Parts** section of this manual.

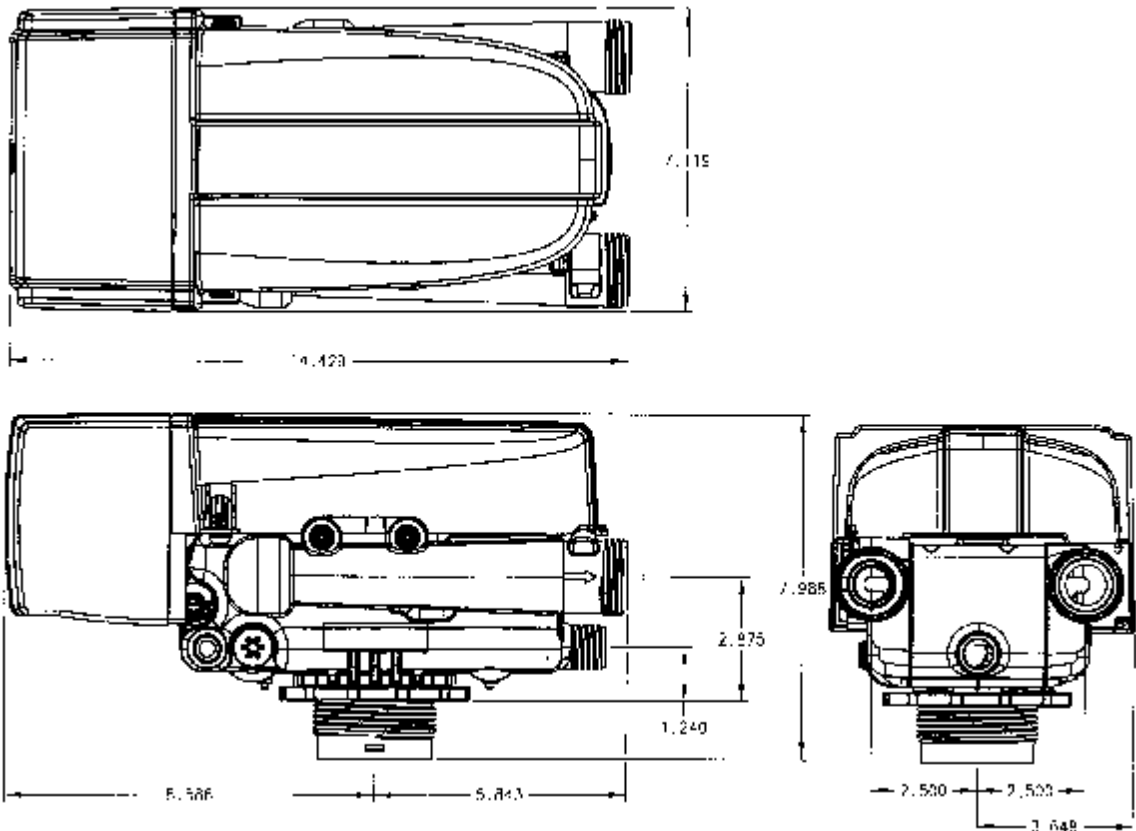
Caution

Service procedures that require the water pressure to be removed from the system are marked with a ! after the possible cause. To remove water pressure from the system, put the bypass valve or three-valve bypass into the bypass position and open the Rinse Drain Valve (the fifth valve back from the control) with a screwdriver, Figure 3. Restore system water pressure when the service work is completed.

Valve Troubleshooting

Problem	Cause	Solution
1. Control will not be draw brine	a. Low water pressure. b. Restricted drain line. c. Injector plugged. ! d. Injector defective. ! e. Valve (2 and/or 4) not closed.	a. Set pump to maintain 30 psi at conditioner. b. Remove restriction. c. Clean injector and screen. d. Replace injector. e. Remove foreign matter from disc and check disc for closing by pushing on stem. Replace if needed.
2. Brine tank overflow.	a. Brine valve (1) being held open. b. Uncontrolled brine refill flow rate. ! c. Valve (3 or 4) not closed during brine draw causing a refill. d. Air leak in brine line.	a. Manually operate valve stem to flush away obstruction. b. Remove variable salt controller to clean. c. Flush out foreign matter by holding disc open and manually operating valve stem. d. Check all connections in brine line for leaks. Refer to instructions.
3. System using more or less salt than salt is set for.	a. Inaccurate settings. b. Foreign matter in controller causing incorrect flow rates. ! c. Defective controller	a. Correct setting. b. Remove variable salt controller and flush out foreign matter. Manually position control to brine draw to clean controller (after so doing, position control to "purge" to remove brine from tank). c. Replace controller.
4. Intermittent or irregular brine draw.	a. Low water pressure b. Defective injector. !	a. Set pump to maintain 30 psi at conditioner. b. Replace both injector and injector cap.
5. No conditioned water after regeneration.	a. Unit did not regenerate. b. No salt in brine tank. c. Plugged injector. !	a. Check for power. b. Add salt. c. Clean injector. Flush with water.
6. Control backwashes at excessively low or high rate.	a. Incorrect backwash controller used. b. Foreign matter affecting controller operation. !	a. Replace with correct size controller. b. Remove controller and ball. Flush with water.
7. Flowing or dripping water at drain or brine line after regeneration.	a. Drain valve (5 or 6) or brine valve (1) held open by foreign matter or particle. b. Valve stem return spring on top plate weak.	a. Manually operate valve stem to flush away obstruction. b. Replace spring
8. Hard water leakage during service.	a. Improper regeneration. b. Leaking bypass valve. ! c. O-ring around riser tube damaged.	a. Repeat regeneration making certain that the correct salt dosage is set. b. Replace o-ring. c. Replace o-ring.

Specifications



Hydrostatic Test Pressure	300	psi (20.69 bar)	300 psi (20.69 bar)
Working Pressure	20-125	psi (1.38 - 8.62 bar)	
Standard Electrical Rating			115V 60 Hz
Optional Electrical Rating		115V 50 Hz, 230V 50Hz, 200V 60 Hz, 24v 60 Hz, 24V 50 Hz,	
		100V 60 HZ, 100V 50 Hz, 12V 50 Hz/transformer, 100V 60 Hz, 12V 50 Hz/transformer	
Electrical Cord (Standard rating)		60 inch (1.5m)	3-wire with plug
Pressure Tank Thread		2 1/2 inch-8 male	
Riser Pipe Diameter Required		1.050 inch OD (26.7 mm)	
Riser Pipe Length		1-1/8 ± 1/8 inches (31.8 mm)	higher than the top of mineral tank
Standard Connection		1-inch (25.4 mm)	copper tube adapters
Optional Connections		1-1/4-inch, 3/4-inch, 22-mm, and 28-mm	copper tube adapters
		3/4-inch BSPT, 1-inch BSPT, 1-inch NPT	brass pipe adapters
		3/4-inch, 1-inch, 25-mm	CPVC tube adapters

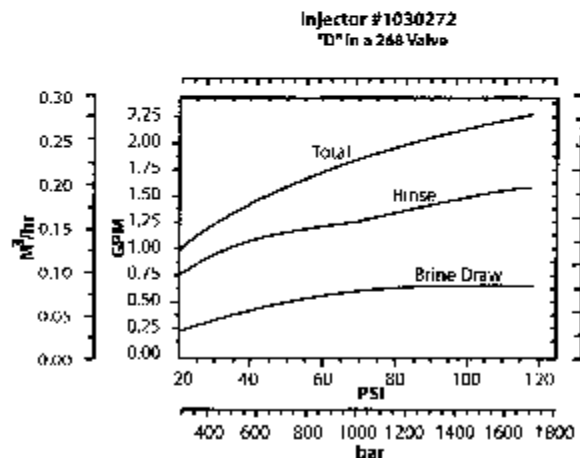
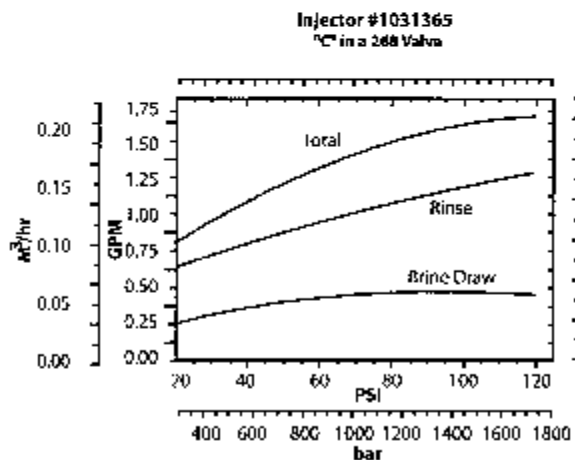
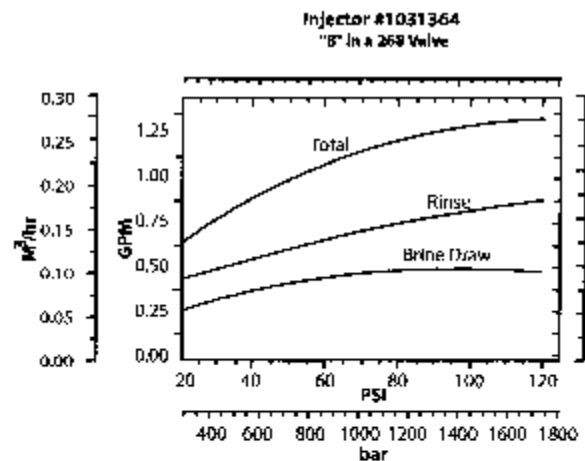
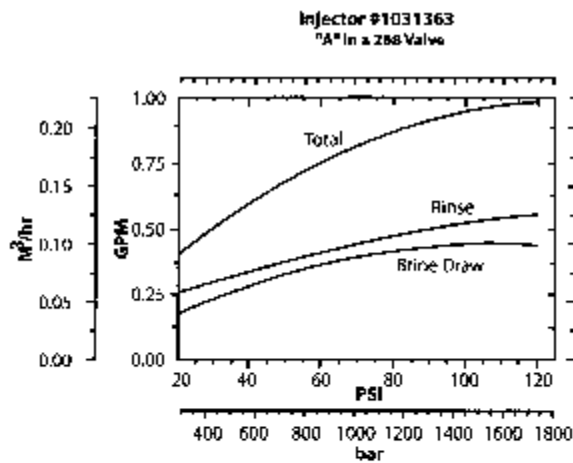
Brine Line Connection	3/8-inch NPT male
Drain Line Connection	3/4-inch NPT male
Optional Bypass Valve	Rotating handles, full 1-inch porting, reinforcing Noryl
Control Module, Tank Adapter	Reinforcing Noryl
Rubber Goods	Compounded for cold water service
Program Clock (Timer)	960: Available in English, German, French, Italian, Spanish, Japanese
Brine Refill Control	1 to 10 lbs (0.45 to 4.5kg) of salt or 3 to 19 lbs (1.4 to 8.6kg) of salt
Injector Size "A" White	Nozzle .42 (1.1-mm) diameter, throat .089-inch (2.3-mm) diameter
Injector Size "B" Blue	Nozzle .52 (1.3-mm) diameter, throat .099-inch (2.5-mm) diameter
Injector Size "C" Red	Nozzle .59 (1.5-mm) diameter, throat .099-inch (2.5-mm) diameter
Injector Size "D" Green	Nozzle .71 (1.8-mm) diameter, throat .147-inch (3.7-mm) diameter
Internal Backwash Controllers	7 - through 14-inch (17.8- through 35.6-cm) diameter media tanks

All sizes to flow 4.5 gpm/sq ft (183 L/m/m²) of bed

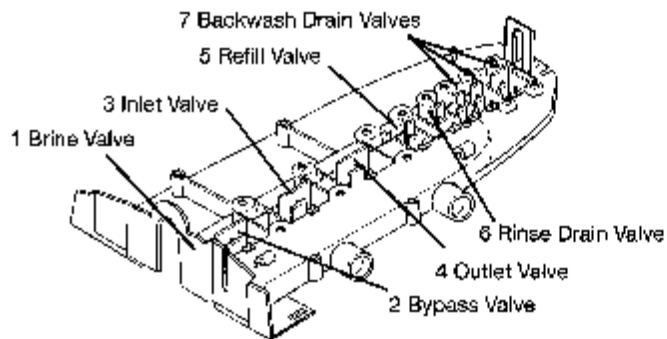
area

Fro tank sizes above 14 inches in diameter, use an external flow

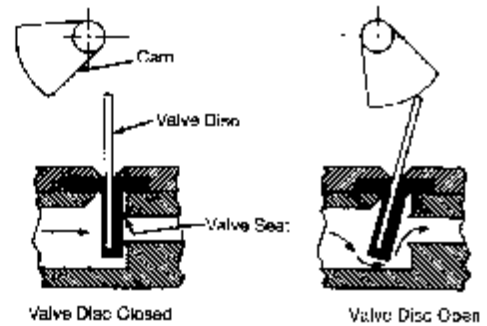
Pressure Graphs



Identification of Control Valving

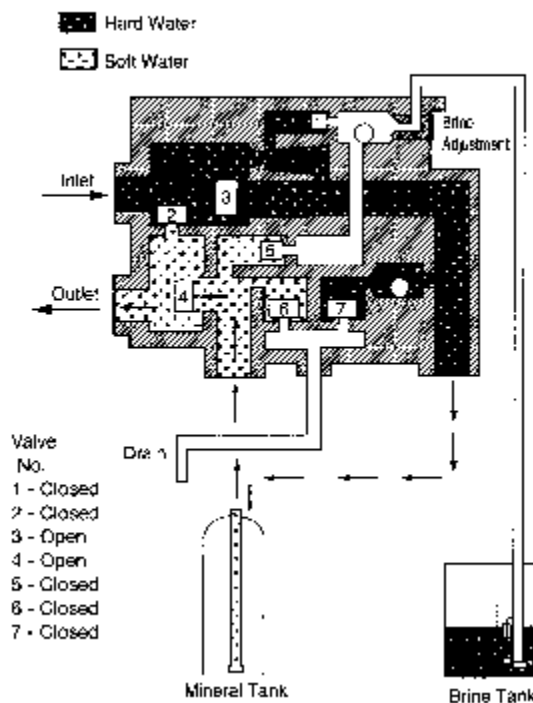


Valve Disc Principle of Operation

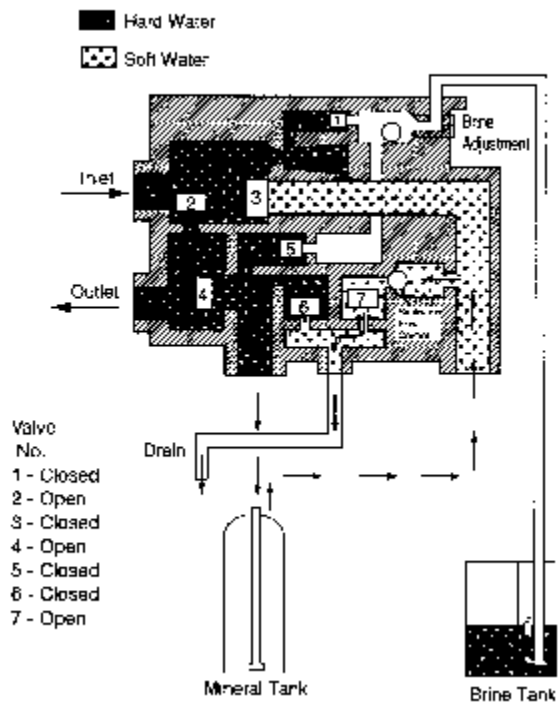


Flow Diagrams

1 Service Position

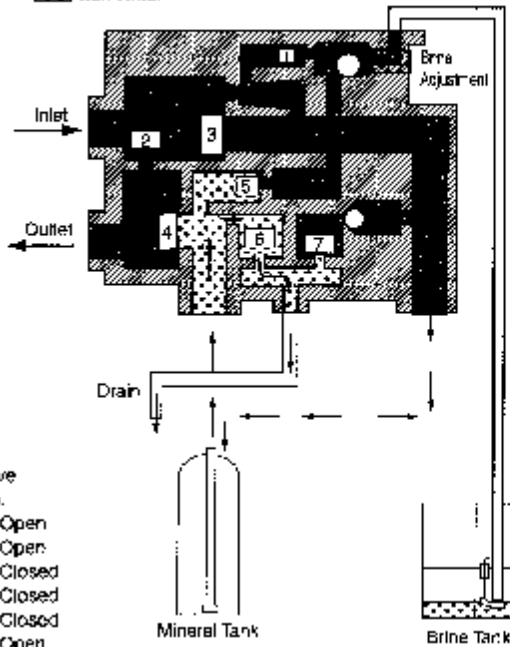


2 Backwash Position



3 Brining/Slow Rinse Position

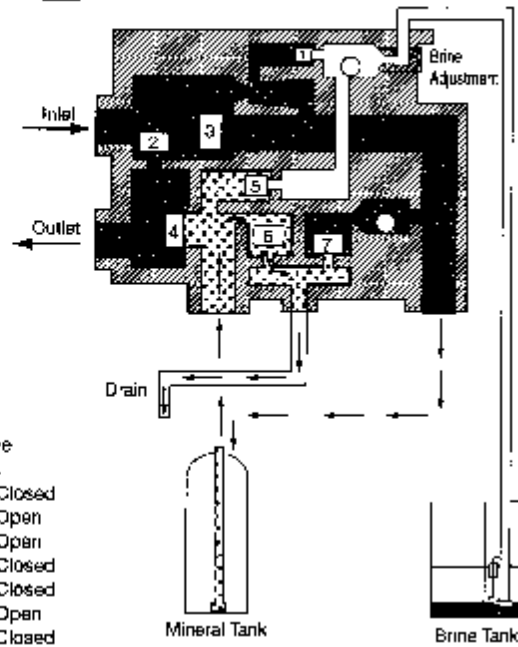
 Hard Water
 Soft Water



Valve
 No.
 1 - Open
 2 - Open
 3 - Closed
 4 - Closed
 5 - Closed
 6 - Open
 7 - Closed

4 Purge Position

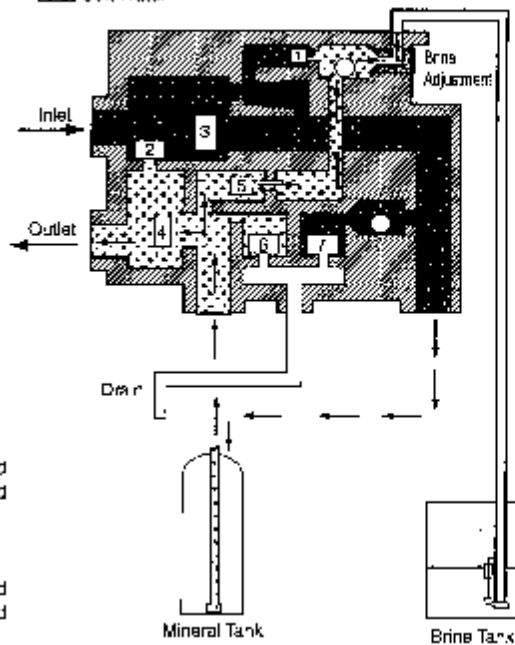
 Hard Water
 Soft Water



Valve
 No.
 1 - Closed
 2 - Open
 3 - Open
 4 - Closed
 5 - Closed
 6 - Open
 7 - Closed

5 Brine Refill Position

 Hard Water
 Soft Water



Valve
 No.
 1 - Closed
 2 - Closed
 3 - Open
 4 - Open
 5 - Open
 6 - Closed
 7 - Closed

SPECIFICATIONS

Voltage	240V/12V Transformer
Current	50 mA
Operating Temperature	34 to 120°F (1 to 49°C)
Humidity	10 to 100% condensing allowed
Water Meter Accuracy	0.5 to 23 gpm

Note: Wall mounted transformer is rated for indoor use only.

Glossary of Terms

Alarms

Alarms are beeps, which alert you to operating conditions requiring attention. The beeps are on for one second and off for nine seconds. The display shows the type of error. Refer to the **Alarms** section in this manual for additional information.

Backwash

An upward flow of water, which expands the resin, bed to remove foreign particles.

Brine

The salt solution which regenerates the conditioner's resin bed

Brine Draw

The process of drawing the brine solution from the salt storage tank into the resin tank.

Calendar Override Regeneration

If a normal demand-based regeneration does not occur, the Model 960 Control regenerates the system after a preset number of days. Your dealer can set this feature at 1 to 30 days.

Fast Rinse (Purge)

A flow of water through the resin bed which propels any remaining brine solution out of the resin tank to the drain.

Hardness

A common quality of water containing dissolved calcium, magnesium and other elements. Water hardness is usually expressed in grains per gallon or milligrams per litre as calcium carbonate equivalent

Manual Regeneration (Guest Cycle)

Forces the control to regenerate by pressing the REGEN button.

Regeneration

Includes the backwash, brine draw, and fresh water rinse steps necessary to prepare the resin bed for conditioning after exhaustion. Abbreviated as "REGEN" in this manual.

Regeneration Indicator

The mechanical component which indicates the regeneration cycle status.

Resin Bed

The supply of synthetic organic exchange material used in water conditioners.